Abstract of the Disclosure:

[0014] Temperature-sensing apparatus is mounted within a wafer chuck to contact the underside surface of a wafer secured thereby. Photoluminescent material on a sensing element that is mounted in resilient contact with a wafer emits luminous flux in response to radiant-energy stimulation with a characteristic intensity that varies with time as a function of temperature. An optical channel couples radiant energy between the photoluminescent material and a remote optical analyzer that supplies pulses of radiant energy and receives the luminous flux to determine the temperature of the sensing element in contact with the wafer.